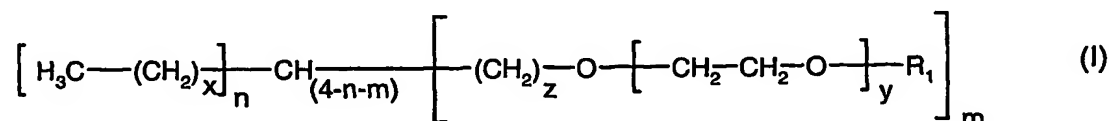


What is claimed is:

1. A process for the preparation of a polyolefin nanocomposite which comprises melt mixing a mixture of a) a polyolefin, b) a filler and c) a non-ionic surfactant.
2. A process according to claim 1, wherein the filler is a natural or synthetic phyllosilicate or a mixture of such phyllosilicates or a layered hydroxycarbonate.
3. A process according to claim 1, wherein the filler is a layered silicate clay or a layered hydroxycarbonate.
4. A process according to claim 1, wherein the filler is a montmorillonite, bentonite, beidelite, mica, hectorite, saponite, nontronite, sauconite, vermiculite, ledikite, magadite, kenyaite, stevensite, volkonskoite, hydrotalcite or a mixture thereof.
5. A process according to claim 1, wherein the non-ionic surfactant is a block or graft copolymer containing a hydrophilic and a hydrophobic segment which do not contain an onium functionality.
6. A process according to claim 5, wherein the hydrophilic segment is a poly(ethylene oxide) block and the hydrophobic segment is a branched or unbranched polyolefin, a fluorocarbon, a siloxane or a low molecular weight methacrylate.
7. A process according to claim 1, wherein the non-ionic surfactant is a sorbitan ester, a dimethylsiloxane-ethylene oxide-block copolymer, a poly(methyl methacrylate)-block-poly(oxyethylene) copolymer or a compound of the formula I



wherein

m is 1 or 2,

n is 1 or 2,

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x is greater than or equal to 1,
y is greater than or equal to 1,
z is greater than or equal to 0, and
R₁ is hydrogen or C₁-C₂₅alkyl.

8. A process according to claim 7, wherein the sorbitan ester is an ester of sorbitol or an ethoxylated sorbitan with a C₁₂-C₂₅carboxylic acid.

9. A process according to claim 1, wherein the polyolefin is polyethylene or polypropylene or copolymers thereof.

10. A process according to claim 1, wherein the filler is present in an amount of from 1 to 15 %, based on the weight of the polyolefin.

11. A process according to claim 1, wherein the non-ionic surfactant is present in an amount of from 0.1 to 7.5 %, based on the weight of the polyolefin.

12. A process according to claim 1, wherein the melt mixing occurs between 120 and 290°C.

13. A process according to claim 1, comprising in addition, besides components (a), (b) and (c), further additives.

14. A process according to claim 13, comprising as further additives phenolic antioxidants, light-stabilizers, processing stabilizers, pigments, dyes, plasticizers, compatibilizers, toughening agents, thixotropic agents, levelling assistants, acid scavengers and/or metal passivators.

15. A process according to claim 1, wherein the mixture of the filler and the non-ionic surfactant, and where applicable further additives, are added to the polyolefin in the form of a master batch which contains the mixture in a concentration of from 2.5 to 40% by weight.

16. A polyolefin nanocomposite obtained by a process according to claim 1.

17. A nanocomposite comprising

- a) a polyolefin which is susceptible to oxidative, thermal or light-induced degradation,
- b) a filler,
- c) a non-ionic surfactant, and
- d) an additive selected from the group consisting of phenolic antioxidants, light-stabilizers, processing stabilizers, pigments, dyes, plasticizers, compatibilizers, toughening agents, thixotropic agents, levelling assistants, acid scavengers and metal passivators or mixtures thereof.

18. An article from polyolefin nanocomposite prepared according to claim 1.**19. Use of a non-ionic surfactant to intercalate and exfoliate a filler and disperse the filler in a polyolefin matrix to form a nanocomposite.**